

## **General Disclaimer**

### **One or more of the Following Statements may affect this Document**

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

77-10144  
CR-152637

DISTRIBUTION AND CONCENTRATION OF SUSPENDED MATTER  
IN DELAWARE BAY

"Made available under NASA sponsorship  
in the interest of early and wide dis-  
semination of Earth Resources Survey  
Program information and without liability  
for any use made thereof."

V. Klemas and W. Philpot  
Center for Remote Sensing  
College of Marine Studies  
University of Delaware

(E77-10144) DISTRIBUTION AND CONCENTRATION  
OF SUSPENDED MATTER IN DELAWARE BAY  
(Delaware Univ.) 2 p HC A02/MF A01 CSCI 08J

N77-21510

Unclas  
G3/43 00144

April 10, 1977  
Report on Significant Results  
NASA LANDSAT CONTRACT NAS5-20983  
UN 20570

Prepared for  
GODDARD SPACE FLIGHT CENTER  
GREENBELT, MD 20771

## SIGNIFICANT RESULTS

In a single LANDSAT scene, if the atmospheric conditions are essentially constant over the scene, changes in upwelling radiance from the water are essentially related to the relative strength of absorption and scattering by the water. The usual measure of this relative strength is the single scattering albedo  $w_0$  which is the percentage of light removed from a beam by scattering.

The problem of remote sensing of suspended matter in water was analyzed in terms of the single-scattering albedo and a semi-empirical relationship between satellite radiance measurements and the concentration of suspended matter in the water was developed. The relationship was tested using data from the 7 July 1973 LANDSAT overpass of Delaware Bay with good results. Suspended sediment concentration maps for the entire Delaware Bay were prepared using radiance values extracted from LANDSAT MSS imagery and correlating them with ground truth samples collected from boats and a helicopter.